DOCUMENT RESUME

ED 170 018 PS 010 115

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TITLE Does the Changing View of Early Development Imply a Changing View of Early Education?
PUB DATE 78
NOTE 31p.

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS *Child Development; Developmental Stages; Disadvantaged Environment; *Early Childhood Education; *Early Experience; *Environmental Influences; Preschool Children
IDENTIFIERS *Developmental Continuity; *Life Span Development

ABSTRACT

This paper critically reviews the theoretical and empirical basis supporting the traditional early experience position formulated by Bloom and Hunt, discusses the factors responsible for the emergence of the newer life span position and the implications of this new view for understanding both the role of early experience and the facilitation of early childhood development. The current re-evaluation of the early experience position from a life span perspective reflects a new "zeitgeist" which is the result of the convergence of five factors: (1) the continuing reinterpretation of Piaget; (2) the increasing usage of transactional developmental methodology; (3) the re-emergence of stage based developmental models; (4) the re-emergence of a strong life span developmental psychology; and (5) the re-emergence of a "sympathetic" understanding of the child. The strong life span view, which sees the degree of influence of early experience as dependent on the existence of mechanisms insuring the continuity of those early experiences, implies the following shifts in emphases towards: (1) a greater appreciation of the distinction between species-specific and culture-specific development; (2) a greater emphasis on the importance of the continuity of educational experiences; and (3) a role for early childhood educators that emphasizes horizontal extension rather than vertical acceleration. (Author/SS)

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Does the Changing View of Early Development Imply a Changing View of Early Education?

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ABSTRACT

There is increasing evidence to support the hypothesis that the first five years of life are not disproportionately more important in determining ones future development. Studies of children and animals experiencing early trauma, of children involved in early childhood intervention projects, and of individuals followed longitudinally from infancy through adulthood show neither a consistent or irreversible relation between early experience and subsequent developmental status. Rather, such evidence supports a highly canalized view of early development that is characterized by the development of species-specific rather than culture-specific behavior patterns. With respect to early childhood education, this weak view of early experience supports a greater stress placed on the continuity of educational experiences and on curricula fostering horozontal extension rather than vertical acceleration of developmental skills.

Does the Changing View of Early Development Imply
a Changing View of Early Education?

There is a small but growing movement occurring in child development. It is directed at the keystone of most early childhood education theory. It argues that the early childhood years (0-5) are not disproportionately more influential in defining the course of development. In fact, for some aspects of development, the early years may even be relatively unimportant.

This paper first reviews the theoretical and empirical basis supporting both the traditional strong early experience position and the newer weak early experience position. It then defines the factors responsible for the emergence of this new view of early development. Finally the paper discusses the implications of this weak view for both our understanding of the role of early experience and the facilitation of early childhood development.

The Strong Early Experience Position

Evans (1975) argues that a strong early experience view involves five basic assumptions.

1. Children are, by nature, malleable and their growth and development can be modified extensively in a variety of directions.
2. The earlier one can effect a plausible intervention, the better.
3. The manipulation of early experience will influence subsequent psychological functioning. This influence can be salutary or hindering. In either case, cumulative development is involved.
4. The provision of qualitatively sound experience can mollify or compensate for basic lacks in the childs environments. Such lacks define the basis on which experiences can be built. Furthermore, since the schools scholastic emphasis demands certain basic learning capabilities, such capabilities must become the focus for early intervention.
5. Children who fail to reap the benefits of planned intervention are likely to develop in ways that are counter productive to extant social-educational conditions. Or, since a high level capacity for symbolic (cognitive) activity is one of mans greatest strengths, children who manifest disorders in cognitive performance are failing to achieve their human potential. Thus, resources must be marshalled to prevent or remediate such disorders (p. 6).

Clearly no scholars have been more responsible for the development of these assumptions than Benjamin Bloom (1964) and J. McV. Hunt (1961, 1964, 1969). Bloom's (1964) analysis of the major longitudinal studies led to a number of conclusions concerning the course of human development. For our purpose, the two most relevant are that "variations in the environment have greatest quantitative effect on a characteristic at its most rapid period of change and least effect on a characteristic during the least rapid period of change" (p vii) and that "in terms of intelligence measured at age 17 about 50% of the development takes place between conception and age 4, about 30% between ages four and eight, and about 20% between ages 8 and 17. (p. 88) Bloom's conclusion about intellectual development at age four is of course both widely known and held by most teachers and parents of young children.

In Intelligence and Experience Hunt (1961) convincingly laid to rest the outmoded views of intelligence as fixed and predetermined. In its place, he provides a learning theory oriented interpretation of Piaget that supports a developmental epigenetic view "the concept of the match." The concept of the match implied that successful development occurred through the successive, cumulative exposure of children to increasing complex and symbolic materials and experiences.

Although Hunt and Bloom arrived at essentially identical conclusions, they did so via different routes. Bloom's was statistical and psychometric. He made extensive use of Anderson's (1939) overlap hypothesis.

The hypothesis states that the "correlations in longitudinal data are a direct function of the percent of the development at one age which has been obtained at an earlier age" (Bloom, 1964, p. 28). According to Bloom, this view of longitudinal data is most clearly true for characteristics which are additive. That is, what is obtained by one age is not lost and is included in the measure of the characteristic at a later age. Height is an excellent example. Correlations between measures at two points in time are assumed a function of the height present at time one plus the gain between time one and time two. As the rate of gain decreases, the degree of overlap increases and the resulting correlation increases. Since Bloom's 50% statement was based on an overlap analysis, it is reasonable to conclude that he also viewed intellectual development as an additive process.

Hunt's analysis was based on the view that "the effects of cultural deprivation are analogous to the experimentally found effects of experiential deprivation in infancy." (1969, p. 47) These found effects were of three types. The first were studies of animals who experienced atypical or abnormal early rearing experiences. These included the work of Denenberg (1969), Harlow (1949, 1958), Levine (1957, 1961), Riesen (1958, 1961) and Scott (1968). The second were reports of children experiencing atypical abnormal early experiences. These included the work of Dennis (1938, 1940, 1941), Goldfarb (1955), John (1963), and Lewis (1961, 1966). The third were studies of planned early childhood intervention experiences. These included the work of Bereiter and Engelmann (1966), Karnes and Hodgins (1969), Klaus and Gray (1968), Skeels (1966), Skeels and Dye (1939), Weikart (1967) and White and Held (1966)[1]

Along with the writings of Caldwell (1967), Hebb (1949), and Fowler (1962), the work of Bloom and Hunt provided much of the theoretical and empirical justification for the legislation of Federal monies over the past decade toward programs for young children and their families.

The Weak Early Experience Position

The weak early experience position has yet to produce a Hunt or a Bloom. Rather, the position is based on a collection of studies, often dissimilar in purpose and method. These studies either fail to support or actually contradict the strong early experience position.

The individual who has best summarized, integrated, and interpreted these studies is A.D.B. Clarke (1968, Clarke and Clarke, 1959, 1976). In giving the 1967 Maudsley Lecture, Clarke posed the question of "whether early experience is likely to possess a potent effect upon, or act as a crucial determinant of, adult behavior" (p. 1061). Clarke hypothesized that "early learning will have effects which, if unreinforced, will fade with time. It will not 'per se' have any long term significance upon adult behavior, other than as an essential link in the developmental chain." (p. 1062). Clarke examined his hypothesis through a review of different types of research dealing with the effects of early experience.

In his review of animal studies Clarke found the results ambiguous and of questionable generalizability to humans. Although giving the important

research of Sluckin (1964), Harlow (1963), Levine (Levine and Lewis, (1959), Thompson and Heron (1954), and Melzack (1954) their proper due, he also notes that critical periods have been artificially extended (Salzen and Sluckin, 1959), that even Harlow reports that his isolated monkeys showed less abnormal behavior with subsequent pregnancies and that there is some evidence (Peters and Murphee, 1966) to suggest that at least for rats, later traumatic experiences may have a more permanent effect than earlier experiences. Clarke concludes this first review by noting that even where relatively permanent effects have been found their generalizability across phylogenetic levels is questionable.

In a more recent review of the effects of early experience on later behavior in rats, Erlenmeyer - Kimbling (1972) reports that "out of a total of 40 studies testing the permanence of early treatment effects there were 37 in which at least one of the tested strains fails to display a significant difference between the experimental and control condition." (p. 192) Further, early experience did not significantly influence performance on the subsequent behavioral task in 87 out of the total 162 studies reviewed.

In fact, she concludes, it seems that we have a better than even chance of not finding a significant relationship between an early treatment and a subsequent measure of behavior.

Clarke next turned his attention to human studies. The first (the effects of short changes in early environment) focused on the effects of short term separation. With respect to research concerning the effects of short term hospitalization Clarke finds that even when initial post-hospital follow up have shown behavioral disturbance, there is nevertheless a steady decrease in behavioral disturbance as time goes on.

In a related vein, Sameroff (1975a) failed to find a consistent association between early short term trauma and subsequent developmental status. He notes that the St. Louis studies on anoxia found that although anoxic infants, when compared to non-anoxic controls, did poorly on newborn measures and still showed deficits at age three, they performed almost as well as non-anoxic controls by age seven. Sameoff also failed to find stable relationships between events related to pregnancy, prematurity, and delivery on subsequent developmental status.

Sameroff believes that the long term significance of early experience depends upon the amount, intensity, and duration of subsequent experiences. Only when early experience initiates such a sequence would one expect long term predictability. Samoroff's reference to the work of Weiner, Bierman, and French is a good example. Weiner et al followed up all 670 infants born on the island of Kauai in Hawaii.

Each infant was initially scored on a four point scale for severity of perinatal complications. At twenty months and again at ten years of age, these perinatal scores were related to assessments of physical health, psychological status, SES, family stability, and mothers IQ. At twenty months, low SES infants who had suffered severe perinatal stress were found to be 4 or 5 times more impaired than high SES infants experiencing the same initial trauma. But by the ten year evaluation, neither SES group showed a correlation between 10 year status and nature and degree of perinatal status.

Sameroff concludes that perinatal complications are consistently related to later physical and psychological development only when combined with and supported by persistently poor environmental circumstances. The data further suggest that risk factors operative during the perinatal period tend to disappear during childhood as more potent familial and social factors exert their influence.

Clarke also evaluated the effects of prolonged early experience on subsequent developmental states. Included in this review were the work of Bowlby (1951), Goldfarb (1943), Trasler (1960), Dennis and Najarian (1957), Sayegh and Dennis (1965), and Skeels (1966). Clarke concludes that either the initial deficit failed to hold up (e.g. Dennis), subsequent events compensated for earlier retardation (Clarke's follow-up of Goldfarbs sample) or that the original findings themselves are suspect (e.g., Spitz, 1945). He summarized the review by concluding that "the papers quoted cast the gravest doubt on the notion that early experience without subsequent reinforcement necessarily lays down for the child a fixed and immutable path (p. 1067).

Although not reviewed by Clarke, the early intervention literature would certainly fall into the prolonged early experience category. Notwithstanding recent papers by Palmer and Siegel (1977), and Seitz, Apfel, and Efron (n.d.), most follow-up studies (see Bronfenbrenner, 1975) have found little evidence

for the long lasting effects. These negative results have of course been interpreted in a number of ways. Bronfenbrenner (1975) argues that permanence will only be demonstrated when the family is given a more significant role in the intervention process. Jensen (1969) believes that the deficits are primarily genetic in origin and therefore not sensitive to environmental manipulation. Rohwer (1971) and Elkind (1969, 1976) each believe that the prime time for intervention is not the preschool but rather the elementary school years. Finally Ginsburg (1972) finds the deficit present in the culture, not the children.
It is important to note that a weak view would only require significant treatment effects, measured at program completion, to justify an intervention effort. If children completing the intervention program were significantly different than initially comparable groups of children either experiencing different programs or none at all, then it is reasonable to conclude that the program works. Since from the weak view, events cumulatively interact with each other, conclusions from long term, follow-up evaluations would be ambiguous since it would be difficult to unravel the intervention component from post-intervention components. The insistence of such inappropriate evaluation criteria as long term follow up has much to do with our failure to convince funding sources of the legitamacy of our intervention efforts. In effect, it is like concluding that a five year marriage ended because the honeymoon didn't go as well as expected. Surely, the post-honeymoon period must have had something to do with the problem.

Clarke's also reviewed the stability of personality characteristics. His hypothesis was that "if in early life the basic characteristics of the individual are firmly laid down as a result of genetic and experiential factors in combination and interaction, then one would expect a high correlation between personality assessments of the very young child and those of the same individual when adult" (p. 1067). Evidence from longitudinal studies does not support such a hypothesis.
The Fels (Kagan & Moss, 1962) study found virtually no correlation between adult behaviors with child behaviors during the 0-3 or 3-6 age periods. Significant predictors of adult behaviors did not appear until the 6-10 age period and then were not only low in magnitude but only present if the behavior was consistent with culturally santioned sex role standards. For Kagan & Moss, it was the years of 6-10 and not the preschool and infancy years that were the critical periods.

They conclude that the first four years of contact with the school and peer environments crystallize behavioral tendencies that are maintained through young adulthood.

MacFarlane (1963, 1964) summarizing results from the Berkeley longitudinal studies noted that only one third of the adult status predictions derived from early childhood indicators proved accurate. Approximately 50% turned out more stable and effective as adults than predicted, 20% less so.

In discussing the 20% that did less well than predicted, she observed that "here too the theoretical expectations were rudely jarred by the adult status of a number of our subjects who early had had easy and confident-inducing lives. As children and adolescents they were free of severe strain, showed high abilities and talents, excelled at academic work and were the image of success. One now sees among them at age thirty a high proportion of brittle, discontented, and puzzled adults whose high potentialities have not been actualized, at least of now."

Elders (1974) description of his more deprived middle class sample growing up during the depression provides a similar pattern. Individuals from the deprived middle class sample were found more likely to be functioning well as adults than the non deprived individuals.

Perhaps the most dramatic evidence bearing on the influence of early experience are the findings of Kagan and Klein (1973). At one year of age, their sample of Guatemalyan Indian infants, raised by American standards in a severely deprived environment showed marked developmental retardation when compared to a same age American sample. However, an eleven year old Indian sample having an identical infancy without deliberate intervention, showed no retardation when compared to an 11 year old American sample. They conclude that:

> These data do not indicate the impotence of early environments but rather the potency of the environment in which the organism is functioning. There is no question that early experience seriously affects kittens, monkeys and children. If the first environment does not permit the full actualization of psychological competencies, the child will function below his ability as long as he remains in that context. But if he is transferred to an environment that presents greater variety and requires more accommodations, he seems more capable of exploiting that experience and repairing the damage wrought by the first environment than some theorists have implied. (p. 960)

In explaining why similar findings have not been found with our disadvantaged populations, Kagan & Klein note that "we live in a society in which the relative retardation of a four year old severely influences his future opportunities because we have made relative retardation functionally synonymous with absolute retardation." (p. 961)

The New Zeitgeist

Much of the literature bearing on the relative merits of a strong versus weak view of early experience is not new. Why then are we (Sameoff, 1975; Clarke, 1976; Goldhaber, 1977) now considering a re-evaluation of the role of early experiences. I believe this new zeitgeist is the result of the convergence of five relatively overlapping areas of research. These areas are:

1. the continuing reinterpretation of Piaget;
2. the increasing usage of interactive transactional developmental methodology;
3. the reemergence of stage based developmental models;
4. the emergence of a strong life-span developmental psychology; and
5. the reemergence of a "sympathetic" understanding of the child.

The Continuing Reinterpretation of Piaget: In Intelligence and Experience, Hunt (1961) devoted a large portion of the book to a review, interpretation, and evaluation of Piagetian theory. It is clear from Hunt's treatment of Piaget that he saw the theory as supporting a strong early experience position. Others (e.g. Weikart, 1972, Lavetelli 1968; and Kamii and De Vries, 1977) have also made similar interpretations of Piagetian theory.

Weak early experience proponents, however, also seem comfortable with Piagetian theory. Elkind (1969) has noted that "while children all over the world and across wide ranges of cultural and socioeconomic conditions appear to attain concrete operations at about the age of 6 or 7, the attainment and use of formal operations in adolescence, in contrast, appear to be much more subject to socioculturally determined factors such as sex roles and symbolic proficiency" (p. 333). Favell (1971) in commenting on a paper deliverd by Beilin on "Developmental Stages and Developmental Processes", says that Beilin's reinterpretation of Piagets theory as essentially maturationist is "a reinterpretation with which I am largely in accord although I didn't realize it until last year or so" (p. 190).

For Piaget (1971) neither camp seems to offer much shelter. In the general discussion that followed Flavell's comments on Beilins paper, Piaget made the following observation.

> My friend Daniel Berlyne, wrote an article maintaining I was a neo-behaviorist, and today Beilen has read a paper showing that I am a maturationist. In fact, I am neither one nor the other. I refuse to admit the necessity of a choice between these alternatives, and Beilin's paper has proven very instructive in that it has shown how difficult it is for me to make myself understood. (p. 192)

It would seem as if American developmentalists ability to assimilate Piagetian theory is a reflection of their present level of cognitive functioning. Specifically, our concrete need to organize information into either/or type categories. As Furth (1973) points out well, Piagetian theory is concerned with species-specific developmental experiences. Such experiences do not lend themselves to factorial analysis. Rather than arguing whose side Piaget really is on, developmentalists would better spend their time determining how Piagetian concepts can best be used to facilitate the development of young children. I will return to this point in a later section.

The increasing use of transactional developmental methodology: Much developmental research during the past twenty years has used the principles of parsimony and rigorous experimental control as its watchword. Consistent with such a view, analysis of variance (ANOVA) techniques have been the preferred method of data analysis. Central to the appropriate use of ANOVA models is the assumption of additivity. Specifically, that the relative influence of factors can be parcelled out and that separate variance estimates attributed to each. It is becoming increasingly clear that the additive model is an inappropriate representation of the developmental process. It was actually Hunt (1961) who clearly defines the issue.

> The additive assumption is ambiguous in meaning, first because neither heredity nor environment operates directly on behavior, and certainly not directly in the terms of the various scales by means of which they are assessed; and second, because it is unlikely that intelligence, heredity or environment are properly regarded even as scales, not to say scales based upon family income, the vocabularies of father and mother, the Whittier scale, etc. (p. 329)

More recently, Sameroff (1975 a, b) has shown that main effect models (such as ANOVA) are neither adequate to fully explain or predict developmental events. With the exception of events of such extreme nature (e.g. severe malnutrition, organic brain damage, severe abuse and neglect) that other factors are clearly overridden, Sameroff does not believe that main effects models allow for accurate conclusions. The problem is further complicated by our insistence on rigorous experimental control. By studying developmental events in an artificial setting, the natural ecology of the developmental process is altered. As a result the relative influence of factors is likely to differ in the two environments. In fact, the greater the degree of control necessary to produce the desired effect the less influential the factor in a more typical environment. When laboratory oriented developmentalists adopted the methods of the physical and biological sciences they seemed to have failed to appreciate the difference between recreating the natural environment within the laboratory and merely studying an event under laboratory controlled conditions. Sameroff also finds fault with the interaction models generated from ANOVA procedures.

> The major reason behind the inadequacy of this model is that neither constitution nor environment are necessarily constant over time. At each moment, month, or year the characteristics of both the child and his environment change in important ways. Moreover, these differences are interdependent and change as a function of their mutual influence on one another. (1975 a, p. 281)

The preferred model for Sameroff is the transactional model. Such a model "stresses the plastic character of both the environment and the organism as it actually participates in its own growth" (p. 281)
Through the use of cross-lagged panel correlations, Clarke-Stewart (1973) was able to examine mother-child interaction from a transactional perspective. These correlation techniques allow the determinates of all possible associations between measures at multiple points in time. For instance, one set of analyses showed the complex reciprocity of mother-child interaction. While maternal attitudes affected maternal behaviors which the mother imposed on the child those attitudes were in turn influenced by the mothers playful and stimulating contact with the child.

> At Times 1 and 2 the cross-lagged correlations for infant attachment and maternal attention suggested that maternal attention was causing an increase in infant attachment. From Time 2 to Time 3, however, the cross-lagged correlations implied the opposite: that infant attachment was causing maternal attention. This finding suggests the possibility that, as mother and child search for harmonious, balanced interaction over the course of development, first one then the other assumes the "casual role" Clarke-Stewart, 1973, p. 90-91).

The reemergence of state-based developmental models: As noted previously in this paper, the strong early experience position reflects a quantative, continuous, linear development model; the weak position, a qualitative, discontinuous, transactional developmental model. The growth of the weak position reflects, in part, the growing acceptance of stage based developmental models.

According to Reese and Overton (1970), developmental stages are best understood as levels of organization. Level of organization, in turn, is best defined as a unique set of structure-function relationship. "As organization changes to the extent that new system properties emerge and become operational, we speak of a new level of organization which exhibits a basic discontinuity with the previous level." (Reese & Overton, 1970 p. 143) The notion of a basic discontinuity clearly contradicts the cumulative assumption of a linear model. Hence the weak position.

Our changing views of stage theory is illustrated by the types of research that Piagetian theory has generated. Whereas initial work attempted to either disprove (e.g. Hall & Simpson 1968) or "create" (Gagne, 1968) Piagetian stages later work seems to have acknowledged their "realness" and has instead focused on acceleration (White, 1975) and application (Poulsen, Magay, & Luber, 1976) of stage based developmental theory.

The emergence of a strong life-span developmental psychology: Closely tied to the issue of stage based developmental models has been the emergence of a strong life-span developmental psychology. (Baltes & Schaie, 1973; Datan & Ginsburg, 1975; Goulet & Baltes, 1970; Nesselroade & Reese, 1973).

As the "terminal status" (Bloom, 1964) for development is extended beyond adolescence, through adulthood to the aging years, evidence of long term stability from the early childhood years becomes increasingly difficult to find. In some instances, it is rather the accumulation of relatively discrete events that eventually produces a developmental outcome (e.g., Sameroff & Chandler, 1975). In others, it is the development during adulthood of still additional developmental stages (Riegel, 1973). And in still others, it is the emergence of developmental events that have little, if any, antecedent in the pre-adult years (Neugarten, 1969). This broadening of perspective is clearly forcing a reevaluation of the significance of events during the early years.

The life span perspective is especially useful in helping to unravel the multiple determinants of continuity and discontinuity. Specifically, separating the influence of the historical-cultural context on development from the maturational context (Stein & Baltes, 1975). For example, the data from Fels longitudinal study (Kapan & Moss, 1962) showed that "the degree of continuity of these response classes was intimately dependent upon its congruence with traditional standards for sex role characteristics. The differential stability of passivity, dependency, aggression, and sexuality for males and females emphasizes the importance of cultural rules in determining both behavioral change and stability" (p. 268).

If their conclusion is correct, a replication of the study with a group of children socialized toward androgyny should result in a very different pattern of correlations across time.

The reemergence of a "sympathetic" understanding of the child: In concluding her very insightful book Life Among the Giants, Young (1966) remarks that only when we come to enjoy children for what they are rather than what they might become can we truly facilitate their development. Hers is a sympathetic understanding of the child.

Although there is nothing inherently unsympathetic in the strong early experience view its assumed direct casual link to later development gives the early years a unique focus, intensity, and concern. White's (1975) recent book serves as a good example. White warns parents that if they haven't provided the proper environment for their child by age three, they may have so handicapped their child that subsequent intervention may be virtually useless. Conversely, if they have done a good job a few years of a mediocre school system should

have little impact on the child. Bijou (1976) takes a similar view when he predicts that future educators will view "preschool as the most important educational experience in a person's life (p. 164)." It would be hard for any parent to simply enjoy their children knowing the gravity of their rearing techniques.

The weak early experience view, in seeing early childhood as a strongly canalized (Waddington, 1966, Fishbein, 1976) period, takes some of the pressure off the parent. Not that parent behavior is unimportant. Rather, it is that the child's early development is more resilient to stress than previously thought (Elkind, 1974). Sameroff (1975 a) for example believes that "despite the great variety and range of influences on development, there are a surprisingly small number of developmental outcomes. Evolution appears to have built into the human organism regulative mechanisms to produce normal developmental outcomes under all but the most adverse of circumstances (p. 283)." Sameroff's viewpoint is not unique. Skolnick (1976) believes that before ages five to seven maturation plays a major role in developmental change. After age seven, learning and culture become the major forces in psychological development. And as previously noted Flavell (1971), has also come to hold such a view. He believes that cognitive changes during childhood have formal "morphogenetic" properties which must have a biological growth process as their substrate. "The major cognitive changes are, in neurologically intact children largely invevitable, momentous, directional, uniform and irreversible" (p. 191). From such a view, one is forced to share Kagon and Klein (1973) conclusion that "we live in a society in which the relative retardation of a four year old severely influences his future opportunities because we have made relative retardation functionally synonymous with absolute retardation" (p. 960).

Implications for Early Childhood Development

Before discussing the implications of a weak early experience view for early childhood development I want to state clearly what are not the implications. They are not that the early years are unimportant. They are not that early developmental experiences are unimportant, unnecessary and of no value. They are not that the best intervention is no intervention. They are not that we should return to early childhood programs consistent with the views of Gesell (1940) and Goodenough (1934). On the contrary, a weak early experience view sees the early years as very important. Where the weak view differs from the

strong view concerns the nature of development during the early years and how this development can be best facilitated. Specifically, the weak position offers threee major implications for early childhood development:

1) a greater appreciation of the distinction between species-specific and culture-specific development;
2) a greater emphasis on the importance of the continuity of educational experiences; and
3) a role for early childhood educators that emphasize horozontial extension rather than vertical acceleration.

A greater appreciation of the distinction between species-specific and culture-specific development: Species-specific characteristics are those aspects of behavior and development that are found in all members of a species. Such characteristics are relatively unaffected by environmental circumstance, and with the exception of organically impaired individuals, develop in a similar rate and sequence. For humans, the two most ovbious examples are language development and the creeping-crawling-walking motor development sequence.

Culture-specific behaviors are unique to a historical time and place. Since they are not common to all members of the species, they may be considered an acquired skill. Whereas the ability to use language is species-specific and therefore does not require a deliberate acquisition process, the acquisition of a particular language does require some deliberate form of intervention.

The relative importance, influence, and dominance of species-specific and culture-specific development is not constant across the life cycle. The weak early experience view supports the hypothesis that the early years are more a period of species-specific development than culture-specific development. Statements supportive of the hypothesis by Flavell (1971) and Skolnick (1976) have already been mentioned. Kagan and Klein (1973) concluded from their San Marcos sample that:

> the properties of the motor or autonomic systems occur because each physiological system or organ naturally exercises its primary function. The child explores the unfamiliar and attempts to make his ideas and actions to some previously acquired representation because there are basic properties of the mind. The child has no choice (p. 961).

Sameroff and Chandler (1975) make strong reference to the "self-righting" tendencies of the young child. Furth (1973), in outlining a Piagetian view of the nature-nurture controversy concludes by arguing that:

> One can only hope that its widespread popularity today is not merely a reaction to the abuses to which the IQ tradition has led -of which the nature-nuture controversy is a prime example - but that Piaget's theory can become the occasion for a more humanly relevant, that is biologically grounded, perspective on intelligence and the human person. (p. 72)

What each of these researchers have noted is that much of early childhood development is strongly canalized development. As Waddington (1966) envisioned development, patterns which seem relatively impervious to environmental events were strongly canalized; those easily influenced, weakly canalized. In a sense, at each point in development, for all members of a species, and for a variety of phenotypic characteristics, a set of targets is aimed for, and despite underlying genetic variability, genetic processes operate together to ensure that the target will be hit. This is a very active process in which genes compensate for, or collaborate with one another to ensure that phenotypic development will reach those targets, by whatever route is necessary. Since cross-cultural research (Labov, 1970, Cole & Bruner 1972) has repeatedly shown development to be least differentially influenced as the extreme of the life cycle, it is reasonable to conclude that there is suffucient evidence to support a weak early experience view of early development.

At the applied intervention level the species-specific/culture-specific distinction becomes the cultural deficiency/cultural difference interpretations of developmental differences between priviledged and non-priviledged racial, ethnic and social groups. If one accepts the weak position one must also agree with Cole and Bruner's (1972) argument that the differences between cultural groups is at most merely superficial and with Ginsburg (1972) that the environment of the poor child is quite adequate for promoting the basic forms of cognitive activity.

A greater emphasis on the importance of the continuity of educational experiences: Clearly one of the most important implications of the weak early experience view is that for an environmental intervention to be significant, it must have a high degree of continuity. As Kagan and Klein (1973) note, such a view does not indicate the impotence of early environments, but rather the

potency of the environment in which the organism is functioning.
For the early childhood educator, the continuity issue takes two forms. First, insuring continuity with both subsequent education experiences (school-preschool continuity) and contemporaneous educational experiences (preschool-parent continuity). Second, to make sure that the preschool does not become the scapegoat for childrens failure in the elementary school (Elkind 1969).

Although the weak early experience view is certainly not alone in advocating strong continuity within the childs early developmental experiences, the assumptions of the weak view change the advocacy from one of preference to one of necessity. The fact that there is a paucity of information in the literature concerning continuity is perhaps some indication of its relative importance from a strong early experience perspective.

What we do know about home/school continuity clearly support Bronfenbrenner's (1975) conclusion that "without family involvement, intervention is likely to be unsuccessful, and what few effects are achieved are likely to disappear once the intervention is discontinued" (p. 470). The family involvement need not be solely in terms of direct intervention. Thomas and Bowermaster (1974) believe that continuity in terms of expectations and ease of transition may be equally important. They find that children whose home experience is congruent with their school experience seem to have greater success in school. For early childhood educators, this means a renewed emphasis on explaining to parents at the beginning of the program all aspects of program functioning, staffing, evaluation, and intervention. Home/school continuity can be enhanced through the use of home visits, parent meeting, use of parent resources in the school, and incorporation of home values into the educational program (e.g. bicultural and bilingual programs).

As difficult as these goals are to obtain in preschool programs, they become even more elusive in day care programs. Powells (1977 a, b) analysis of parent-caregiver relationships in day care settings found the "highest frequency of parent-caregiver exchange occurs at the transition point when parents leave and pick up their children at the center." (p. 5) Telephone contact were the next most frequent communication made and parent conferences, always a strong component of preschool programs, least (less than 25% of the parents had a scheduled conference with center staff). When one considers the confusion at the transition time, the fact that many parents never even leave their car, the

fact that at pick up most parents are tired and eager to get home, and that because of staggered staffing patterns a particular childs caregiver is less likely to be present than during the middle of the day, its a miracle that any communication takes place at all. Where good parent-caregiver communication existed, it was more a function of informal friendship networks than planned efforts to enhance continuity. This finding reinforces the notion that day care should function as an extended family. Powell's conclusion is bleak.

> If these research findings are used to construct the social world of day care children, the image which emerges is one of fragmentation and discontinuity. For many children it appears the boundaries of the child care center and the family are sharply defined and narrow in intersection. Evidences of system inter-dependency are few. The world is a disconnected one, with the child's family, other children's families and the day care center functioning as independent, detached systems (p. 18, 1976).

I see no reason to think this situation will improve until business, industry, labor and government place the quality of family life as one of their highest priorities.

Improving preschool/school continuity is a no less necessary and no less elusive goal. Continuity can be improved through two actions - maintenance of the peer group across transition and greater teacher to teacher communication patterns. Wolff and Stein (1966) have found that stability of Head Start gains is partially a function of the percentage of the kindergarten class that were Head Start participants. Specifically, they found that gains were maintained through the kindergarten year as long as at least 25% of the group had participated in Head Start. Their findings reinforce those of Powell (1977 a, b) concerning the importance of factors maintaining the community context of the educational experience. Unfortunately as Thomas and Bowermaster (1974) note, as long as composition of the peer group is considered more important than the continuity of the peer group, little improvement in this area is likely.

Elkind and Lyke (1975) offer a number of practical suggestions for improving teacher/teacher continuity. They believe that the growth of early childhood programs have often increased tensions between early childhood and kindergarten teachers. First, the increased emphasis on cognitive development, steming from a strong early experience view, has resulted in many early childhood programs incorporating activities and materials into their curriculum

that were once the sole province of the kindergarten. Second, the approach to education is often different.

> Despite the current emphasis upon cognitive training, most early education programs maintain their traditional child-centered and informal approach to classroom organization. At the elementary school level, however, the new emphasis on structural management systems for learning are being extended downward to the kindergarten classrooms. The result is that children from early education programs come bounding into kindergarten classrooms as autonomous creatures used to alot of self selected learning experience, only to be met by a classroom teacher who in many instances, must get them through a programmed learning experience (p. 396).

To resolve these tensions, Elkind and Lyke suggest communication focusing on overlap and complement, sharing and coordination of materials and activities. and exchange visits to become familiar with one another's classrooms, facilities, and teaching demands. Only then will we begin to approach Anderson and Shane's (1972) "seamless learning."

Improved communication is designed to facilitate development through continuity of effort. Another aspect of the continuity issue is to define those factors which seem to insure the continuity of poor development. A weak view maintains that continuity of development is neither a process of genetic unfolding or the irreversibility of early learning experiences. Rather, it is the continuity of events external to the individual that maintains his rank relative to others. Gayne and Paradise (1961) argue that the extent to which a child's performance at one grade level is predictive of his performance at another is an index of the ability of the system to educate its children. The greater the correlation, the less competent the system. In other words, the system should be reducing variability among its children. In reality, the opposite is the case. This stratification might be justified if school performance correlated with adult life tasks but as both Jencks (1972) and McClelland (1970) have found, they don't. Again, it is important to remember the Kagan and Moss (1962) conclusion that behavior is maintained only to the extent that it is supported by external factors.

Our insistence on a strong early experience view has prevented us from attacking the real villians of inequality - the elementary school and those social systems that either directly or indirectly foster family disorganization.

Kagan and Moss (1962), Elkind (1969), Kohlberg (1968) and Rohwer (1971) have each argued that since the years from six to twelve are still the crucial ones with respect to later academic achievement, they represent the prime time for intervention.

A role for early childhood education that emphasizes horozontial extension rather than vertical acceleration. If the early childhood years aren't the prime time for intervention, for what are they the prime time? They are the prime time for expansion of those developmental skills which are universally found in preschool age children.

A weak view argues that stage based development through the preadolescent years is virtually universal among all organically intact children. As a result, efforts to accelerate this development are unnecessary, of little lasting effect, and, in a sense, harmful. Harmful because they occupy time that could better be used in other ways. Harmful because "the data suggest the hypothesis that the longer we delay formal instruction, up to certain limits, the greater the period of plasticity and the highter the ultimate level of achievement" (Elkind, 1965, p. 332).

Piaget has noted that children are not always able to apply their cognitive structure equally well in different content areas (the sequence of conservation acquisitions being a prime example). Even though two tasks involve the same logical relations and are presented in a parallel manner the child is often able to master one before the other. Piaget has referred to the phenomenon as horozontial decalage. Although there is clearly an ad-hoc quality to the concept (Phillips, 1975), a possible explanation may lie in the tendency of our educational system (including preschool formal instruction) to emphasize instruction in limited areas, namely language and cognition. As Kohlberg (1968) argues however, Piaget and his followers have systematically studied the development of preschool childrens play, their conversations with one another, their conceptions of life, of death, of reality, of sexual identity, and of good and evil" (p. 1056-7). In other words, the proper goal of early education is to broaden the usuage base of stage based developmental skills. If, as Flavell (1971) suggests, development is a sort of megaphone with the small end toward birth and the large end toward maturity, efforts to broaden the circumference of the small end could produce results of geometric proportions.

There is a second proper goal for early education. It should help make learning and mastery fun.

> The guiding principle of early education (preschool and elementary) should be to provide the child with repeated experiences of gratification resulting from intellectual activity. Lest this recommendation be grossly misread, it must be emphasized that it refers to satisfying work and play, not to training in techniques of self-indulgence and mediocrity. (Rohwer, 1971, p. 338).

Both Elkind (1965) and Rohwer (1971) express concern that the extension of formal academic instruction into the early years may result in intellectually burnt out children. They each believe that early formal instruction blunts the child's intrinsic motivation for learning.

The goals of horozontial extension and gratification from learning experiences are no less proper, no less urgent, and certainly of no less lasting significance than those consistent with a strong early experience view. For those who see the weak view as questioning the need for any form of planned early childhood educational experience, I would argue that exactly the opposite conclusion is true.

One final point. The misconceptions of the strong early experience view are, in large part due to their narrow theoretical and methodological approach to the study of development. By conceptualizing and studying development out of context they have artificially altered the relative importance of factors influencing development (McCall, 1977). Conclusions, based on such data would of course fare no better. The approach has about as much validity as studying the natural mating behavior of primates at the monkey house in the Bronx Zoo. The weak early experience view through greater emphasis on both the contextual and interdisciplinary nature of development holds greater promise for eventually unraveling the mysteries of human development.

Footnotes

1. This list of studies supporting a strong early experience view is not meant to be necessarily current. Since the focus of this first section of the paper is on the origins of a strong early experience view, more contemporary studies are not included. For more contemporary reviews, the reader is referred to Evans (1975). Day and Parker (1977), Morrison (1976), and Fein and Clarke-Stewart (1973).

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